

MCM₅

STORM WATER POLLUTION PREVENTION TRAINING

GH-01

Responsible **Authority**

*Public Works

Applicability

Residents

Visitors

Public Service **Employees**

Businesses

Commercial/ Industrial

Construction

BMP DESCRIPTION

In addition to the specific BMPs for Good Housekeeping and Pollution Prevention, the City of Killeen also prepares and implements general training for City employees on storm water pollution prevention techniques. This consist of updating the BMP/Standard Operations (BMP/SO) manual used by City staff charged with City facility and maintenance operations (both fixed facility staff and field operations), along with an companying annual training curriculum. The course will be structured for a 1 hour annual detailed training session for all city employees.

RATIONALE FOR SELECTION

Each department has been contacted individually to develop training materials for that department. Public Service Employees receive storm water pollution prevention training from their respective supervisors at safety meetings at least annually. Director of Public Works (or his appointee) gives a brief storm water pollution prevention training at each monthly new employee orientation meeting.

YEAR	IMPLEMENTATION ACTIVITY	MEASURABLE GOAL
12/13/2013 TO 9/30/2014	 Updated BMP/SO manual pages as needed; 1 training session per employee 	Training sign in sheetCopy of training material
10/01/2014 TO 9/30/2015	 Updated BMP/SO manual pages as needed; 1 training session per employee 	Training sign in sheetCopy of training material
10/01/2015 TO 9/30/2016	 Updated BMP/SO manual pages as needed; 1 training session per employee 	Training sign in sheetCopy of training material
10/01/2016 TO 9/30/2017	 Updated BMP/SO manual pages as needed; 1 training session per employee 	Training sign in sheetCopy of training material
10/01/2017 TO 12/13/2018	 Updated BMP/SO manual pages as needed; 1 training session per employee 	Training sign in sheetCopy of training material
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REFERENCES



Responsible Authority *Public Works

Applicability

Residents

Visitors

X Public Service Employees

Businesses

Commercial/ Industrial

Construction

MCM 5

STORM WATER CONTROLS AT CITY FACILITIES

GH-02

BMP Description

The City has multiple properties that drain into the city's MS4. The City will develop an inventory of all City facilities and all public storm water controls. Environmental Services staff will develop site specific inspection check lists that will be used for annual site inspections. The City has several high priority facilities that have an existing industrial storm water permit. The City will continue to inspect/asses all facilities annually to evaluate potential discharges, high priority facilities, and compliance with the BMP/SOP Manual for each facility. The BMP/SOP Manual will be updated in accordance with GH-08.

RATIONALE FOR SELECTION

The Dec. 2013 TPDES permit requires the City to monitor, develop and implement storm water controls at all city facilities. Creating an inventory list, inspection list and performing annual inspections will allow the city to set the example for private development.

YEAR	IMPLEMENTATION ACTIVITY	MEASURABLE GOAL
12/13/2013 TO 9/30/2014	 Develop a draft inventory of City Facilities and storm water controls; Develop a draft inspection/assessment for stormwater compliance at City Facilities Maintain the City's Industrial Storm Water Permits 	 Copy of draft inventory Copy of draft inspection/assessment Copy of Industrial Storm Water Permit Coverage
10/01/2014 TO 9/30/2015	 Finalize an inventory of City Facilities and storm water controls; Perform inspection/assessment of City Facilities for stormwater compliance Maintain the City's Industrial Storm Water Permits 	 Copy of inventory Copy of inspections/assessments Copy of Industrial Storm Water Permit Coverage
10/01/2015 TO 9/30/2016	 Review and update (if necessary) the inventory of City Facilities and storm water controls; Perform inspection of City Facilities for stormwater compliance Maintain the City's Industrial Storm Water Permits 	 Copy of inventory Copy of inspections/assessments Copy of Industrial Storm Water Permit Coverage
10/01/2016 TO 9/30/2017	 Review and update (if necessary) the inventory of City Facilities and storm water controls; Perform inspection of City Facilities for stormwater compliance Maintain the City's Industrial Storm Water Permits 	 Copy of inventory Copy of inspections/assessments Copy of Industrial Storm Water Permit Coverage
10/01/2017 TO 12/13/2018	 Review and update (if necessary) the inventory of City Facilities and storm water controls; Perform inspection of City Facilities for stormwater compliance Maintain the City's Industrial Storm Water Permits 	 Copy of inventory Copy of inspections/assessments Copy of Industrial Storm Water Permit Coverage

REFERENCES N/A



Responsible Authority

Public Works *Fleet

Applicability

Residents

Visitors

X Public Service Employees

Businesses

Commercial/ Industrial

Construction

N/A

MCM 5

VEHICLE MAINTENANCE

GH-03

BMP Description

The City will continue to perform vehicle maintenance utilizing current procedures and techniques. Vehicle maintenance is performed on all City owned and operated

vehicles and includes such preventative maintenance services as automotive fluid changes, tire replacements, and battery replacements. Some minor mechanical repairs are also performed, however, bodywork and painting is not conducted at the City service facilities.

As part of this BMP, the City will continue its enhanced leak prevention measures in vehicle impoundment areas and document the leak prevention measures and the disposal of spent automotive fluids.



RATIONALE FOR SELECTION

Vehicle maintenance is currently being performed for City vehicles at the fleet Service Center/Little Nolan Road Complex. Many vehicle fluids such as hydraulic fluid and anti-freeze are already collected for recycling and refurbishing. Water-based parts cleaners that filter and reuse the cleaning solution are also used by the City, which helps eliminate waste solvent generation.

YEAR	IMPLEMENTATION ACTIVITY	MEASURABLE GOAL
12/13/2013 TO 9/30/2014	 Maintain leak prevention measures in vehicle impoundment area; Continue collection, recycling and proper disposal of automotive fluids from maintenance activities 	Document leak detectionDocument fluids disposal
10/01/2014 TO 9/30/2015	 Maintain leak prevention measures in vehicle impoundment area; Continue collection, recycling and proper disposal of automotive fluids from maintenance activities 	Document leak detection Document fluids disposal
10/01/2015 TO 9/30/2016	 Maintain leak prevention measures in vehicle impoundment area; Continue collection, recycling and proper disposal of automotive fluids from maintenance activities 	Document leak detectionDocument fluids disposal
10/01/2016 TO 9/30/2017	 Maintain leak prevention measures in vehicle impoundment area; Continue collection, recycling and proper disposal of automotive fluids from maintenance activities 	Document leak detectionDocument fluids disposal
10/01/2017 TO 12/13/2018	 Maintain leak prevention measures in vehicle impoundment area; Continue collection, recycling and proper disposal of automotive fluids from maintenance activities 	Document leak detectionDocument fluids disposal
	from maintenance activities	Document natus disposar



MCM 5 VEHICLE WASHING

GH-04

BMP Description

Vehicle washing will continue to be performed at the Fleet Service Center/Little Nolan Road Complex for all City owned and operated vehicles. The oil/water separator for the two wash racks will be maintained and cleaned annually.



Responsible Authority

Public Works *Fleet

Applicability

Residents

Visitors

X Public Service Employees

Businesses

Commercial/ Industrial

Construction

RATIONALE FOR SELECTION

Vehicle washing is currently being performed for all City vehicles at the Fleet Service Center/Little Nolan Road Complex in the designated washing bay. Most City vehicles are washed approximately twice a week. An oil/water separator is utilized to filter all wash water from the car wash bay, and needs to be maintained on a regular and frequent schedule.

YEAR	IMPLEMENTATION ACTIVITY	MEASURABLE GOAL
12/13/2013 TO 9/30/2014	Maintain oil/water separator	Maintenance log
10/01/2014 TO 9/30/2015	Maintain oil/water separator	Maintenance log
10/01/2015 TO 9/30/2016	Maintain oil/water separator	Maintenance log
10/01/2016 TO 9/30/2017	Maintain oil/water separator	Maintenance log
10/01/2017 TO 12/13/2018	Maintain oil/water separator	Maintenance log

REFERENCES



Responsible Authority

Public Works *Fleet

Applicability

Residents

Visitors

X Public Service Employees

Businesses

Commercial/ Industrial

Construction

MCM 5

VEHICLE FUELING

GH-05

BMP Description

Vehicle fueling will continue to be performed at the Fleet Service Center. The system will remain in compliance with current TCEQ regulations. The BMP will include the implementation of a Spill Prevention, Control, and Countermeasure

(SPCC) plan. The SPCC plan will be updated, as necessary to be fully compliant with TCEQ regulations. The City will continue to maintain leak detection systems for their underground fuel storage tanks (UST) and document testing and registration.



RATIONALE FOR SELECTION

Vehicle fueling is currently being performed for City vehicles at the Fleet Service Center/Little Nolan Road Complex. The fueling area consists of two islands that are used to dispense unleaded fuel from a 20,000-gallon capacity underground storage tank and diesel fuel from a 10,000-gallon capacity underground storage tank. Both tanks are equipped with leak detection systems. The vehicle fueling area is partially covered with concrete paving.

YEAR	IMPLEMENTATION ACTIVITY	MEASURABLE GOAL
12/13/2013 TO 9/30/2014	 Maintain UST leak detection system Verification of containment 	Update SPCC plan as neededUST report
10/01/2014 TO 9/30/2015	 Maintain UST leak detection system Verification of containment 	Update SPCC plan as neededUST report
10/01/2015 TO 9/30/2016	 Maintain UST leak detection system Verification of containment 	Update SPCC plan as neededUST report
10/01/2016 TO 9/30/2017	 Maintain UST leak detection system Verification of containment 	Update SPCC plan as neededUST report
10/01/2017 TO 12/13/2018	 Maintain UST leak detection system Verification of containment 	Update SPCC plan as neededUST report

REFERENCES



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ROADWAY CLEANING

GH-06

Responsible Authority

* Public Works

Applicability

Residents

Visitors

X Public Service Employees

Businesses

Commercial/ Industrial

Construction

BMP Description

The City of Killeen will continue to perform street sweeping and cleaning at the current frequency. The City uses three Tymco 600 street sweepers. The City will also sweep designated sections of the parking lot of the Fleet Service Center/Little Nolan Road Complex on a bi-weekly basis. The City has an electronic reporting system for tracking the number of lane miles swept for reporting performance measures. In Year 4, the City will purchase a new street sweeper. In Year 5 the City will add an operator to its Street Division to operate the new street sweeper.

RATIONALE FOR SELECTION

The Street Department of the City of Killeen currently performs street cleaning utilizing street sweepers. Several other City programs and procedures also help reduce the volume of debris or trash on the City streets and in waterways. The Stakeholder Group voted this BMP as the highest priority Good Housekeeping BMP.

YEAR	IMPLEMENTATION ACTIVITY	MEASURABLE GOAL
12/13/2013 TO 9/30/2014	 Continue existing regenerative street sweeping Track the number of lane miles swept Review and update street sweeper waste material disposal as needed 	• 5,000 lane miles swept
10/01/2014 TO 9/30/2015	 Continue existing regenerative street sweeping Track the number of lane miles swept Review and update street sweeper waste material disposal as needed 	• 5,000 lane miles swept
10/01/2015 TO 9/30/2016	 Continue existing regenerative street sweeping Track the number of lane miles swept Review and update street sweeper waste material disposal as needed 	• 5,000 lane miles swept
10/01/2016 TO 9/30/2017	 Continue existing regenerative street sweeping Track the number of lane miles swept Review and update street sweeper waste material disposal as needed 	• 5,000 lane miles swept
10/01/2017 TO 12/13/2018	 Continue existing regenerative street sweeping Track the number of lane miles swept Review and update street sweeper waste material disposal as needed 	• 5,000 lane miles swept

REFERENCES



Responsible Authority *Public Works

Applicability

Residents

Visitors

X Public Service Employees

Businesses

Commercial/ Industrial

Construction

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STRUCTURAL BMP & STORM DRAIN SYSTEM MAINTENANCE

GH-07

BMP Description

The City of Killeen will continue to perform storm drain system cleaning as part of its overall drainage maintenance program. The purpose of this practice is to reduce the amount of debris, trash and other pollutants in the storm drain system. The City will update its GIS coverage of storm drain system needing maintenance and its maintenance plan detaining the activities, schedules and long-term inspection procedures. The plan includes formalized procedures for the disposal of waste from the MS4 and will specifically address disposal procedures for spoils accumulated sediments dredge floatables.



RATIONALE FOR SELECTION

The Drainage Maintenance crew currently performs storm drain system cleaning on a complaint basis. The City plans to implement a routine maintenance program. The Stakeholders' Group voted this BMP as the third highest priority BMP.

YEAR	IMPLEMENTATION ACTIVITY	MEASURABLE GOAL
12/13/2013 TO 9/30/2014	 Update GIS coverage of storm drain system to be cleaned Update drainage maintenance schedule Conduct scheduled maintenance 	List of work orders in City Works
10/01/2014 TO 9/30/2015	 Update GIS coverage of storm drain system to be cleaned Update drainage maintenance schedule Conduct scheduled maintenance 	 List of work orders in City Works Purchase Vacuum combination unit
10/01/2015 TO 9/30/2016	 Update GIS coverage of storm drain system to be cleaned Update drainage maintenance schedule Conduct scheduled maintenance 	 List of work orders in City Works Add an operator for the Vacuum combination unit
10/01/2016 TO 9/30/2017	 Update GIS coverage of storm drain system to be cleaned Update drainage maintenance schedule Conduct scheduled maintenance 	List of work orders in City Works
10/01/2017 TO 12/13/2018	 Update GIS coverage of storm drain system to be cleaned Update drainage maintenance schedule Conduct scheduled maintenance 	 List of work orders in City Works Purchase Vacuum Combination Unit Add an Operator for Vacuum Combination Unit

REFERENCES



Responsible Authority *Public Works

Applicability

Residents

Visitors

X Public Service Employees

Businesses

Commercial/ Industrial

Construction

MCM 5 LANDSCAPE AND LAWN CARE GH-08

BMP Description

The City maintains several landscaped facilities including Stonetree public golf

course. Pesticides and fertilizers are used on an "as needed" basis in high use areas. This program focuses on education and certification of municipal employees to reduce water quality impacts from fertilizers The City has licensed and pesticides. applicators that are certified through the Texas Department of Agriculture (TDA). The TDA certification program provides education on proper storage and application techniques and information on alternative control techniques and dosage pest



calculations. The certification program requires an annual exam and continuing education credits for recertification. The City utilizes the TDA requirements to schedule applications of pesticides, herbicides and fertilizers on City maintained areas.

RATIONALE FOR SELECTION

The City of Killeen currently performs landscape and lawn care service in a number of areas throughout Killeen including the public golf course. The City utilizes TDA licensed applicators for pesticide and fertilizer applications. Chemical applications are currently documented through electronic files. The City has a BMP/SOP Manual that was developed during the City's first MS4 permit and is used in the landscaped facilities to ensure that appropriate BMP's are being performed and scheduled accordingly.

YEAR	IMPLEMENTATION ACTIVITY	MEASURABLE GOAL
12/13/2013 TO 9/30/2014	 Track applicators licenses applicable for all City departments and divisions Annual training for applicators Review and update BMP/SOP Manual as necessary 	 List of training dates Copy of licenses Copy of updated BMP/SOP Manual (if updated)
10/01/2014 TO 9/30/2015	 Track applicators licenses applicable for all City departments and divisions Annual training for applicators Review and update BMP/SOP Manual as necessary 	 List of training dates Copy of licenses Copy of updated BMP/SOP Manual (if updated)
10/01/2015 TO 9/30/2016	 Track applicators licenses applicable for all City departments and divisions Annual training for applicators Review and update BMP/SOP Manual as necessary 	 List of training dates Copy of licenses Copy of updated BMP/SOP Manual (if updated)
10/01/2016 TO 9/30/2017	 Track applicators licenses applicable for all City departments and divisions Annual training for applicators Review and update BMP/SOP Manual as necessary 	 List of training dates Copy of licenses Copy of updated BMP/SOP Manual (if updated)
10/01/2017 TO 12/13/2018	 Track applicators licenses applicable for all City departments and divisions Annual training for applicators Review and update BMP/SOP Manual as necessary 	List of training dates Copy of licenses Copy of updated BMP/SOP Manual (if updated)



Responsible Authority *Public Works

Applicability

Residents

Visitors

X Public Service Employees

Businesses

Commercial/ Industrial

Construction

MCM 5

HAZARDOUS MATERIALS STORAGE AND DISPOSAL

GH-09

BMP Description

Hazardous Materials including fuels, oils, paints, herbicides, fertilizers, and pesticides are stored in appropriate containers and cabinets at City facilities. Disposal procedures will continue as currently implemented, which includes a recycling program for automotive fluids. This program will have a strong educational component for both City employees and citizens utilizing several of the previously mentioned public education BMPs. The City will educate employees on proper handling, storage, and disposal of the above identified Hazardous Materials



during new employee orientations and during annual stormwater pollution prevention training (GH-01).

RATIONALE FOR SELECTION

Hazardous materials are stored at the Fleet Service Center/Nolan Road Complex. Current procedures for dealing with hazardous materials vary from department to department. Development of city-wide operation procedures would standardize storage and disposal procedures. Training on these procedures could be incorporated with the Storm Water Pollution Prevention Training program (GH-01).

YEAR	IMPLEMENTATION ACTIVITY	MEASURABLE GOAL
12/13/2013 TO 9/30/2014	Conduct annual training	List of attendees
10/01/2014 TO 9/30/2015	 Conduct annual training Develop formal disposal of Hazardous Waste tracking 	List of attendeesCopy of tracking form
10/01/2015 TO 9/30/2016	 Conduct annual training Document proper disposal of Hazardous Materials used by the City 	List of attendeesList of disposals
10/01/2016 TO 9/30/2017	 Conduct annual training Document proper disposal of Hazardous Materials used by the City 	List of attendeesList of disposals
10/01/2017 TO 12/13/2018	 Conduct annual training Document proper disposal of Hazardous Materials used by the City 	List of attendeesList of disposals
REFERENCES	S	ı

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The City currently collects and recycles used oil from vehicle maintenance at the Fleet Service Center/Little Nolan Road Complex. This greatly reduces the City's disposal costs while also ensuring that the waste oils are not discharged into the local sewer system or creeks and watercourses.

MCM 5

USED OIL COLLECTION & RECYCLING

This program consists of an educational component for the City employees and utilizes several of the previously mentioned public education BMPs to inform public employees of the environmental

concerns of improper disposal of waste oils and disposal alternatives that are available.

GH-10

BMP Description

Responsible
Authority
Public Works
*Fleet

Applicability

Residents

Visitors

X Public Service Employees

Businesses

Commercial/ Industrial

Construction

RATIONALE FOR SELECTION

The City of Killeen Fleet Service Center/Little Nolan Road Complex utilizes tanks to store used oil from the City vehicles, which are recycled by a commercial contractor.

YEAR	IMPLEMENTATION ACTIVITY	MEASURABLE GOAL
12/13/2013 TO 9/30/2014	Inspection and maintenance facility	Copy of inspection logList of quantity recycled
10/01/2014 TO 9/30/2015	Inspection and maintenance facility	Copy of inspection logList of quantity recycled
10/01/2015 TO 9/30/2016	Inspection and maintenance facility	Copy of inspection logList of quantity recycled
10/01/2016 TO 9/30/2017	Inspection and maintenance facility	Copy of inspection logList of quantity recycled
10/01/2017 TO 12/13/2018	Inspection and maintenance facility	Copy of inspection logList of quantity recycled
REFERENCE N/A	ES .	



Responsible Authority

*Public Works Parks

Applicability

Residents

Visitors

X Public Service Employees

Businesses

Commercial/ Industrial

Construction

MCM₅

NON-STORM WATER DISCHARGES – DECHLORINATION EQUIPMENT

GH-11

BMP Description

Dechlorination equipment will be required to remove excess chlorine from wash water that is used to treat new water lines. The Water and Sewer Utilities Division performs super chlorination of new water lines and uses the dechlorination equipment to remove residual chlorine prior to discharge of water into MS4.



Dechlorination equipment will be made available to other departments for use during pool maintenance and to treat backwash water from pool filtering equipment.

RATIONALE FOR SELECTION

De-chlorination equipment is required to prevent the illicit discharge of superchlorinated water to MS4. The equipment will also be made available to the Parks and Recreation Department for use during swimming pool maintenance.

YEAR	IMPLEMENTATION ACTIVITY	MEASURABLE GOAL
12/13/2013 TO 9/30/2014	Use de-chlorination equipment for water line flushing	List of dechlorination use
10/01/2014 TO 9/30/2015	Use de-chlorination equipment for water line flushing	List of dechlorination use
10/01/2015 TO 9/30/2016	Use de-chlorination equipment for water line flushing	List of dechlorination use
10/01/2016 TO 9/30/2017	Use de-chlorination equipment for water line flushing	List of dechlorination use
10/01/2017 TO 12/13/2018	Use de-chlorination equipment for water line flushing	List of dechlorination use

REFERENCES



MCM 5

CITY CONSTRUCTION PROJECTS

GH-12

Responsible Authority

*Public Works

Applicability

Residents

Visitors

X Public Service Employees

Businesses

Commercial/ Industrial

Construction

Description

The City of Killeen is a growing community. The City typically has several city funded Capital Improvement Projects (CIP) and Vertical Construction Projects under construction. The Public Works and Planning & Development Departments will add stormwater compliance inspections for public projects to their inspection procedures. Contractors that are retained by the City shall be required in their contract to comply with the City's stormwater pollution prevention operating procedures. The City has developed, adopted, and maintains an Infrastructure Design and Development Standards Manual and standardized contract documents that it uses to ensure contractor compliance.

RATIONALE FOR SELECTION

The Dec 2013 TPDES permit requires that the City track storm water compliance of city construction projects. The Public Works Department and the Planning & Development Department will perform inspections and track compliance.

YEAR	IMPLEMENTATION ACTIVITY	MEASURABLE GOAL
12/13/2013 TO 9/30/2014	Track compliance with water quality compliance on capital improvement project	List of Inspections
10/01/2014 TO 9/30/2015	Perform site inspections for water quality compliance on capital improvement projects	List of Inspections
10/01/2015 TO 9/30/2016	 Perform site inspections for water quality compliance on capital improvement projects Coordinate with all City Departments to gain input on Department/Division standard inspection practices 	List of InspectionsCopy of input on standardized oversight procedures
10/01/2016 TO 9/30/2017	 Perform site inspections for water quality compliance on capital improvement projects Draft of standardized oversight procedures 	List of InspectionsCopy of draft standardized oversight procedures
10/17/2017 TO 12/13/2018	 Perform site inspections for water quality compliance on capital improvement projects Develop standardized oversight procedures 	List of InspectionsCopy of standardized oversight procedures
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